

Lessons Learned from Marijuana Legalization

Luke D. Niforatos Sr. Policy Advisor, SAM

What is SAM?



- A 501(c)(3) non-profit, educational organization funded by volunteers & private organizations
- Our mission:
 - Educate citizens on the science of marijuana
 - Promote health-first, smart policies and attitudes that decrease marijuana use and its consequences

Groups SAM has collaborated with

- American Society of Addiction Medicine
- American Academy of Pediatrics
- American Academy of Child and Adolescent Psychiatry
- Other leading public health authorities
- Over 30 state affiliates, including:
 - Treatment centers
 - Recovery groups
 - Prevention organizations
 - Law enforcement
 - Leading medical authorities
 - Volunteer citizens



Two Organizations, One Mission

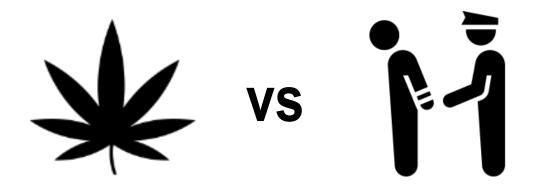


- SAM Action is dedicated to promoting healthy marijuana policies that do not legalize drugs.
- Active at all levels of national, state, and local policy-making
- Invests in and starts organizations to promote smart marijuana policies



- SAM's mission is to educate citizens on the science of marijuana and to promote health-first, smart policies and attitudes that decrease marijuana use and its consequences.
- Brings light to and conducts research into marijuana's negative effects

The false dichotomy: "Legalization OR incarceration?"

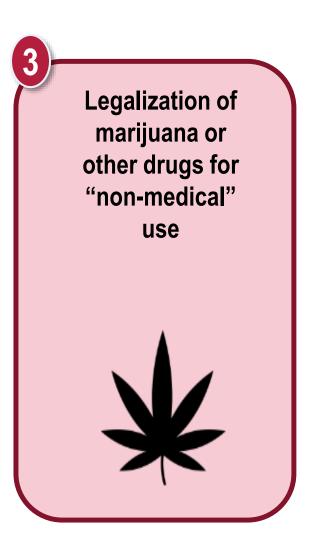




Three separate issues that often get conflated:



Medicinal use of compounds derived from marijuana/other drugs



Vaping Crisis = #PotVapingCrisis

- 84% of the lung illnesses being reported are from THC vapes
- One death in Oregon has been tied to marijuana oil purchased from a state licensed dispensary.
- Recent JAMA Study: Adolescents who vape are 3.5 times as likely to smoke marijuana.

U.S. Surgeon General Jerome Adams: "This isn't your mother's marijuana, the marijuana of today is significantly more potent"



'A dangerous drug': Surgeon general warns against marijuana use by pregnant women, youths

4TH LARGEST TOBACCO COMPANY ON EARTH INVESTS IN BIG MARIJUANA

Auxly Cannabis signs \$123M deal with tobacco giant Imperial Brands











Vancouver firm will get global licences to the British tobacco company's vaping technology

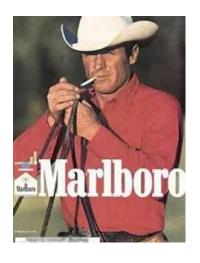
The Canadian Press · Posted: Jul 25, 2019 1:19 PM ET | Last Updated: July 25





ALTRIA MAKES \$1.8 BILLION INVESTMENT IN BIG MARIJUANA

Dec 8th, 2018

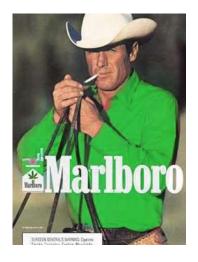




100% ownership of two companies, based in Canada, that are currently licensed to cultivate and sell medical marijuana,







Forbes

Dec 4th, 2018

"Smart Approaches to Marijuana (SAM)'s legalization opponent Kevin Sabet may be right: **like it or not Big Tobacco is invading cannabis.**

Altria, the company that invited unwitting consumers for decades to come to where the cancer is <u>—Marlboro Country—</u> may be looking to shore up stagnant cigarette sales by purchasing Canadian cannabis company Cronos Group."



Now **exempt** from Colorado Clean Indoor Air Act



And This...





Home » Health » MMJ

Former Big Pharma OxyContin CEO Now Selling Medical Cannabis



Published 2 years ago on November 29, 2016

By Maureen Meehan



→ GET COOL TEES



Coming Soon From Molson Coors: Marijuana Beer

Molson Coors' new venture is targeting the Canadian cannabis market.



Corona Owner's Marijuana Investment Reaps \$700 Million

By Uliana Pavlova June 29, 2018, 1:05 PM I Bloomberg



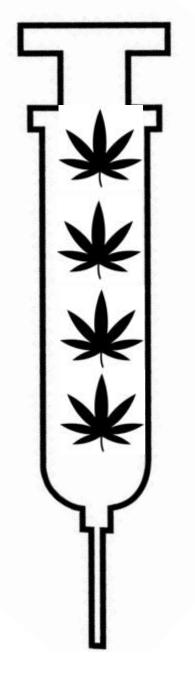








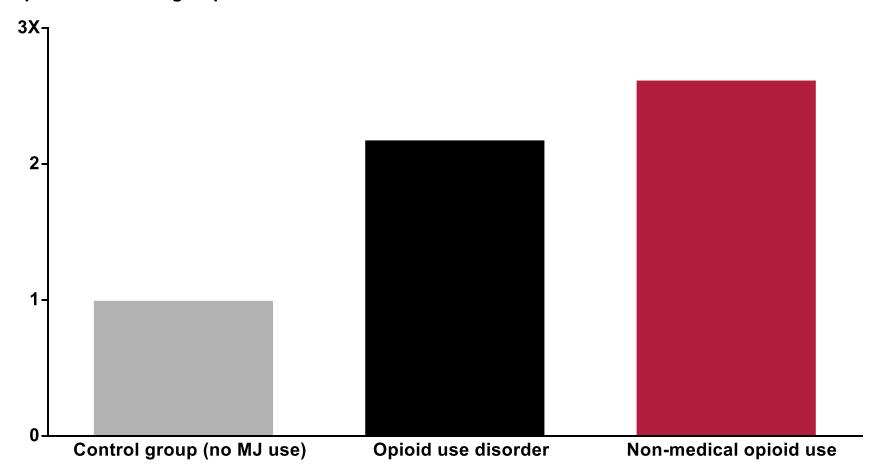
Why talk POT



During an opiate epidemic?

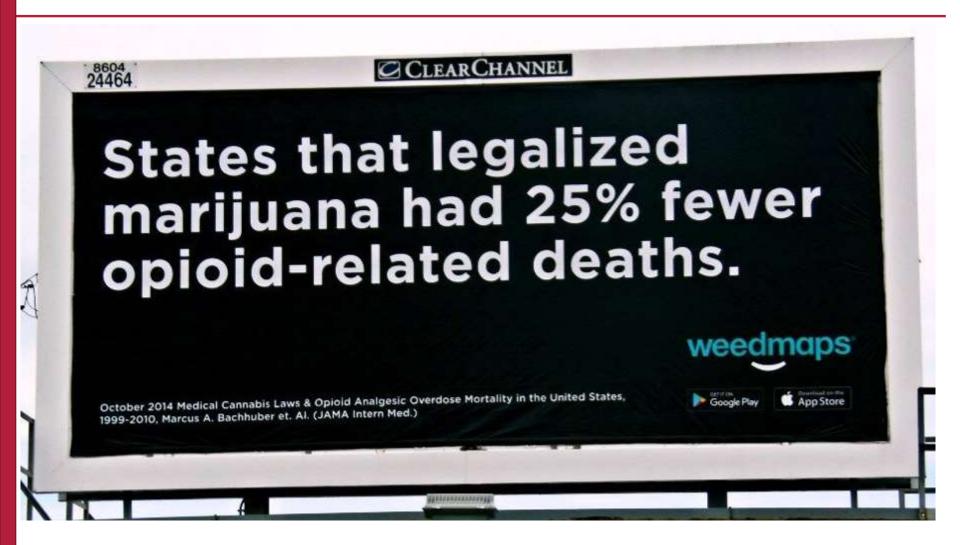
Marijuana use goes hand-in-hand with increased prescription opioid abuse

Chance of subsequent opioid abuse for marijuana users compared to control group





Business Opportunity?



2019: JAMA Updated Opioid Study

Medical marijuana was associated with a 23% INCREASE in opioid deaths.

The authors also said "We find it unlikely that medical marijuana-used by about 2.5% of the US population-has exerted large conflicting effects on opioid overdose mortality. A more plausible interpretation is that this association is spurious."

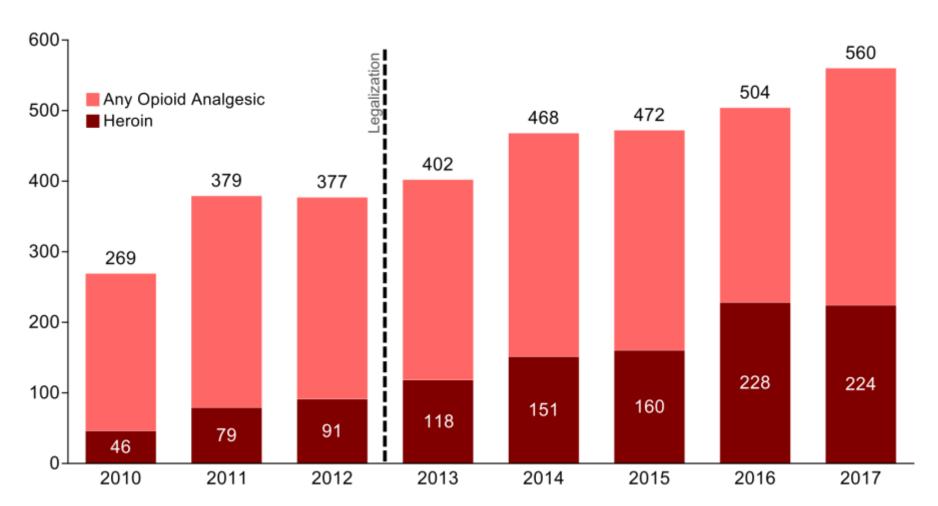
2018 in JAMA Internal Medicine

"The opioid crisis appears to be worsening where marijuana has been legalized."

At the start of the 2010-2016 period, the annual age-adjusted opioid death rate in legalizing and nonlegalizing jurisdictions was the same, with overlapping 95% CIs between 8.0 and 8.5 deaths per 100 000 people. Whereas the nonlegalizing states subsequently had no increase in their opioid death rate until 2014, the monthly rate in the legalizing jurisdictions increased steadily during 2010 through 2013 at 4.5% per year (*P*<.001), while 5 states and the District of Columbia legalized medicinal marijuana, and 2 states legalized recreational use. Thereafter, the legalizing jurisdictions' death rate distinctly accelerated, first to 16.4% per year (*P*<.001) until October 2015 and then to 33.5% per year (*P*<.001) as 12 more states approved medicinal marijuana and 2 more states and the District of Columbia approved recreational use. In the nonlegalizing states, the opioid death rate increased during 2014 through 2016 but more slowly (16.4% per year) than in the legalizing jurisdictions. In 2016, the mean (95% CI) age-adjusted death rate per 100 000 people was 18.2 (18.0-18.4) and 13.2 (13.0-13.4) in the legalizing and nonlegalizing jurisdictions, respectively. As of December 2016, the rate in the legalizing states and the District of Columbia was 52% higher than, and continuing to diverge from, the rate in nonlegalizing states. Areas under the joinpoint regression curves suggest that 20.34 (72%) of 28.19 additional deaths per 100 000 people during January 2010 through December 2016 occurred where marijuana was legalized.

The opioid crisis appears to be worsening where marijuana has been legalized, despite fewer opioid prescriptions, and as such, constitutes evidence for the gateway hypothesis and against the marijuana protection hypothesis. In any event, before other states rush to legalize marijuana and risk worsening the opioid crisis, the marijuana-opioid interaction should be more definitively researched.

COLORADO OPIOID-RELATED OVERDOSE FATALITIES





Lancet 2018 Study Conclusions

- No evidence that cannabis use improved patient outcomes;
- Those who used cannabis had greater pain and lower self-efficacy in managing pain
- No evidence that cannabis use reduced pain interference or exerted an opioid-sparing effect



Cleveland Clinic stands firmly against prescribing medical marijuana to patients



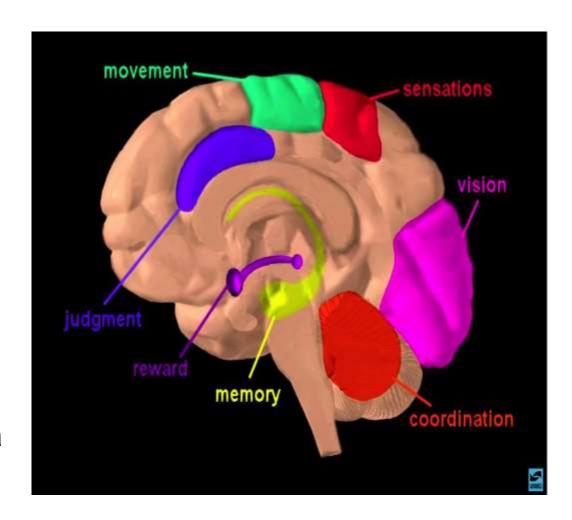


Marijuana's effects on public health



Cannabinoid Receptors Are Located Throughout the Brain and Regulate a Host of Brain Activity

- Brain Development
- Memory & Cognition
- Motivational Systems & Reward
- Appetite
- Immunological Function
- Reproduction
- Movement Coordination
- Pain Regulation & Analgesia

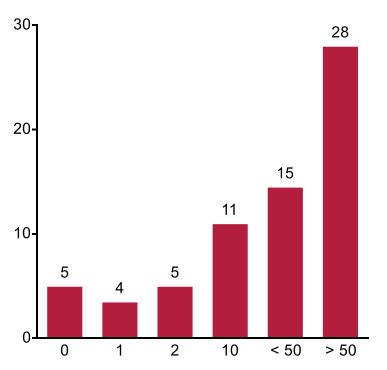




Pot use is strongly correlated with psychosis

MORE MARIJUANA USE CORRELATES WITH HIGHER RATES OF SCHIZOPHRENIA

Cases of schizophrenia per 1,000 people

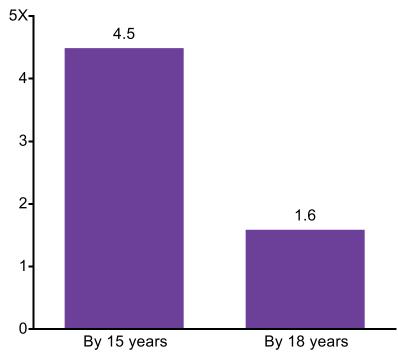


Number of times cannabis used (lifetime)

Study of Swedish Conscripts (n=45570)

EARLIER AGE OF USE CORRELATES WITH INCREASED SCHIZOPHRENIA RISK

Risk multiple for schizophrenialike psychosis at age 26



Year of first use

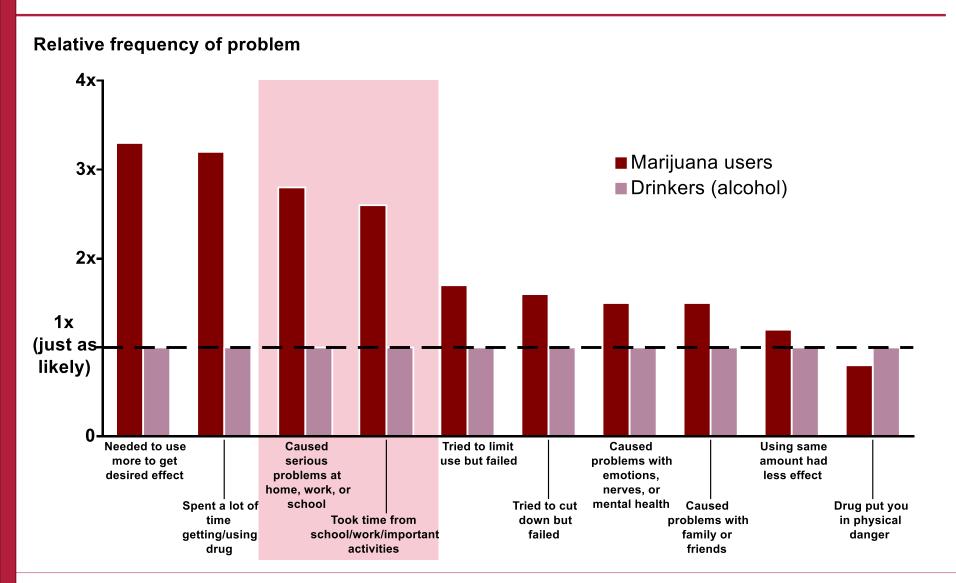
Longitudinal prospective Dunedin study (n=1037)



Lancet 2019 Population-Level Study Conclusions

- Regular high potency marijuana users are 5 times more likely to develop psychosis.
- Compared to 3 times more likely for regular users of lower potency marijuana of the past.

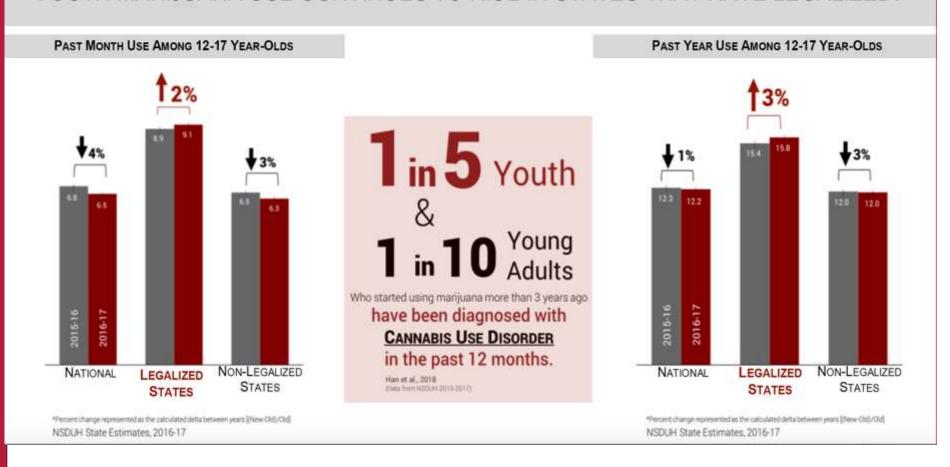
"Safer than alcohol?" Not exactly...





Colorado now #1 in the US for first-time use

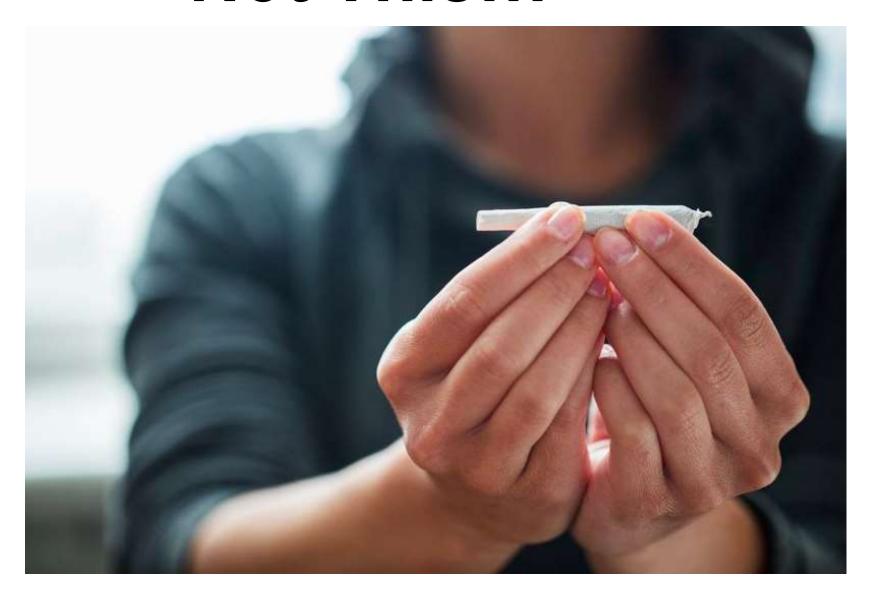
YOUTH MARIJUANA USE CONTINUES TO RISE IN STATES THAT HAVE LEGALIZED.



Today's marijuana



Not This...



...But This











(Ben Livingston, The Cannabist)

Stealth PUFFiT vaporizer

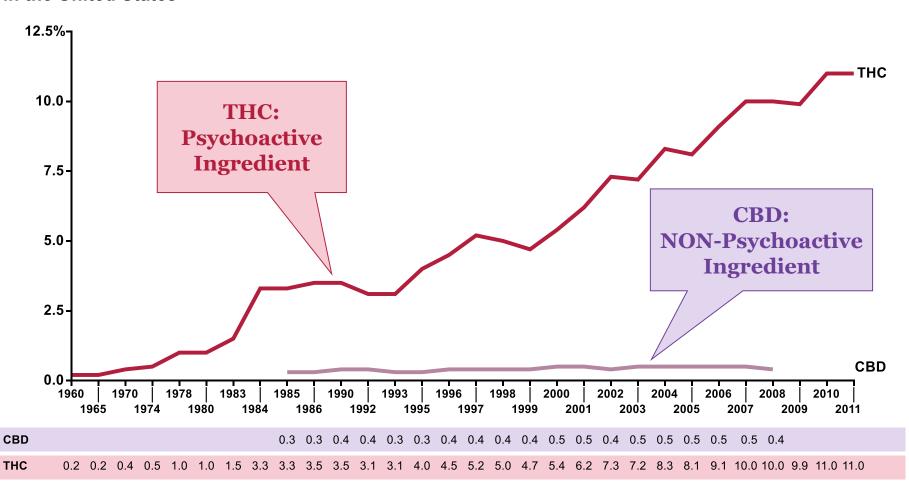






Marijuana has become significantly more potent since the 1960s

Average THC and CBD levels in the United States





Source: Mehmedic et al., 2010

36

International Journal of Drug Policy (2018)

97% THC levels make up more than 15% of the market

 Flower products with THC levels between 10-15% only make up 2% of the market between 2014-2016

Marijuana is not "just a plant" anymore – derivatives contain up to 98% THC



Marijuana is all about industry



The Industry Today





Kid-friendly: comes in shapes & colors attractive to children, like candy and soda

³\$\$\$

Aggressive marketing: free samples, billboard advertising, and other Big Tobacco tactics 95%

Potent: often made w/ concentrates of up to 95% pure THC (joints are ~ 15% THC)

4

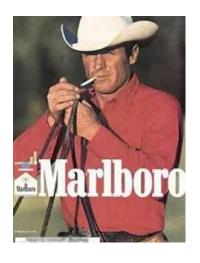
Contaminants: In 2015, CO recalled 100s of thousands of edibles containing banned pesticides



<u>Fighting regulation:</u> The pot industry has lobbied hard against regulation (e.g., warning labels, dosing rules, and bans on ads targeting kids)

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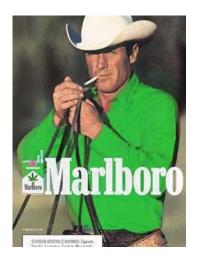




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Marlboro maker Altria nears deal to take 35 percent stake in leading e-cigarette company Juul, sources say

- Altria is nearing a deal to take a minority stake in e-cigarette company Juul, according to people familiar with the situation.
- Selling a portion of itself to Big Tobacco would mark a turning point for Juul, which has been under pressure because of the amount of teens reportedly using its products.

Lauren Hirsch | Angelica LaVito

Published 1 Hour Ago | Updated 20 Mins Ago





The Vape and Marijuana Industries Are Inextricably Linked



























2007

James
Monsees &
Adam Bowen
secure funding
from angel
investors,
including
Nicholas
Pritzker and
officially launch
their company.



2010

Newly established Ploom releases their first product based on Monsees & Bowen's original e-cig design using flavored, looseleaf tobacco pods and a battery-operated heating coil.

2012

Using the same heating technology, the company releases the first loose-leaf vaporizer. While not yet explicitly marketed as a marijuana vaporizer, this was its primary draw.

2015

Japan Tobacco acquires Ploom's Model Two and the associated intellectual property with the device and flavored pods.



2015

In conjunction with the JTI deal, Monsees & Bowen buy back their stake in the company and relaunch as Pax Labs

2015

Pax Labs releases their new e- cig, Juul, shortly after announcing \$46.7 million in Series C funding from investors



2016

In the fall of 2016, Pax
Labs unveils the Pax Era; an electronic marijuana vaporizer that uses similar proprietary technology of pre-filled THC pods.

2017

Juul splits off from Pax Labs and becomes its own entity.

In the spring of 2018, the FDA launched an investigation into predatory marketing to underage children.





PAX is now explicitly a THC vaporizer company

PAX

PRODUCTS

STORE LOCATOR

SUPPORT

MY ACCOUNT



PAX 3



A vaporizer for both flower and waxy extracts. PAX 2



A flower vaporizer to rediscover cannabis.

PAX Era



The effortless system for cannabis oils.



SHOP PAX 3



SHOP PAX 2





SHOPPAXERA

Silicon Valley start-up, Juul, used savvy social media marketing strategies to promote a trendy image associated with their products. They are currently under investigation by the FDA.



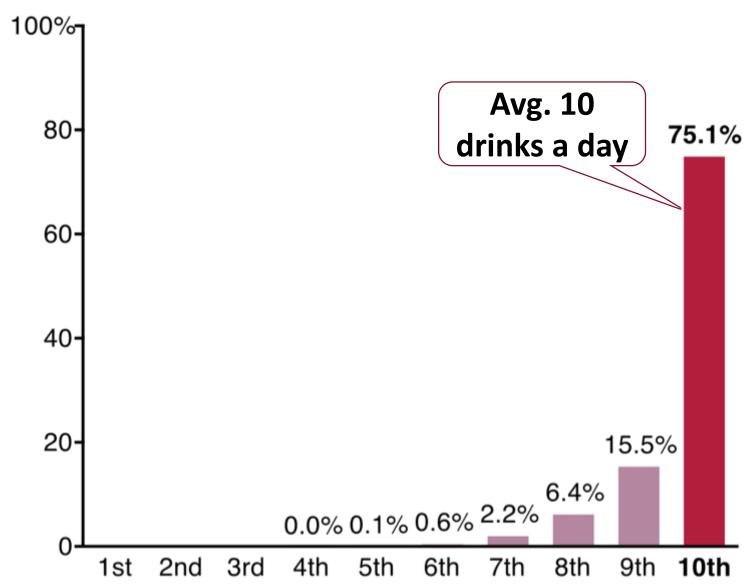


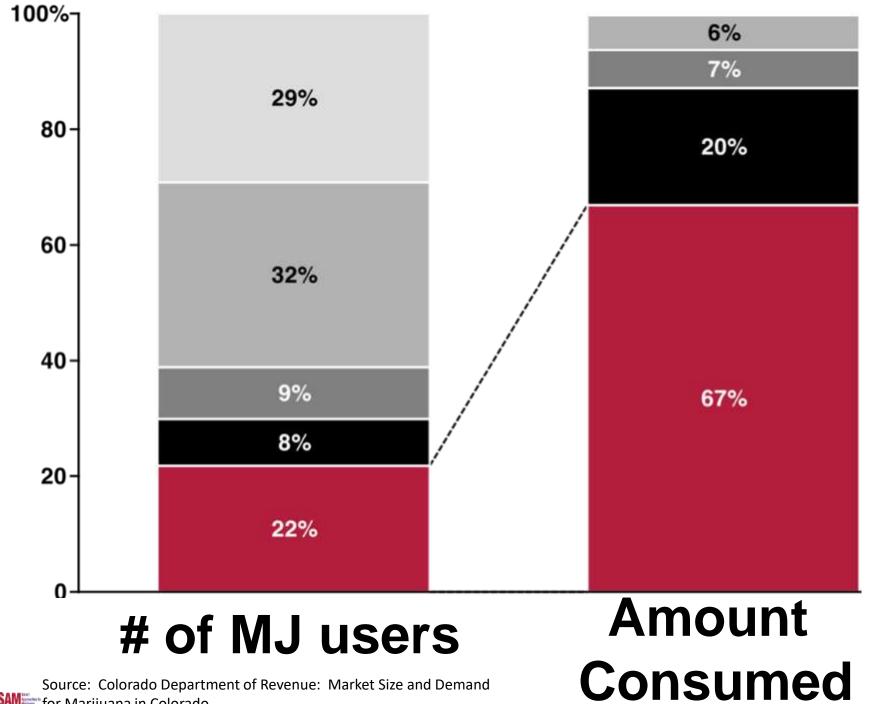




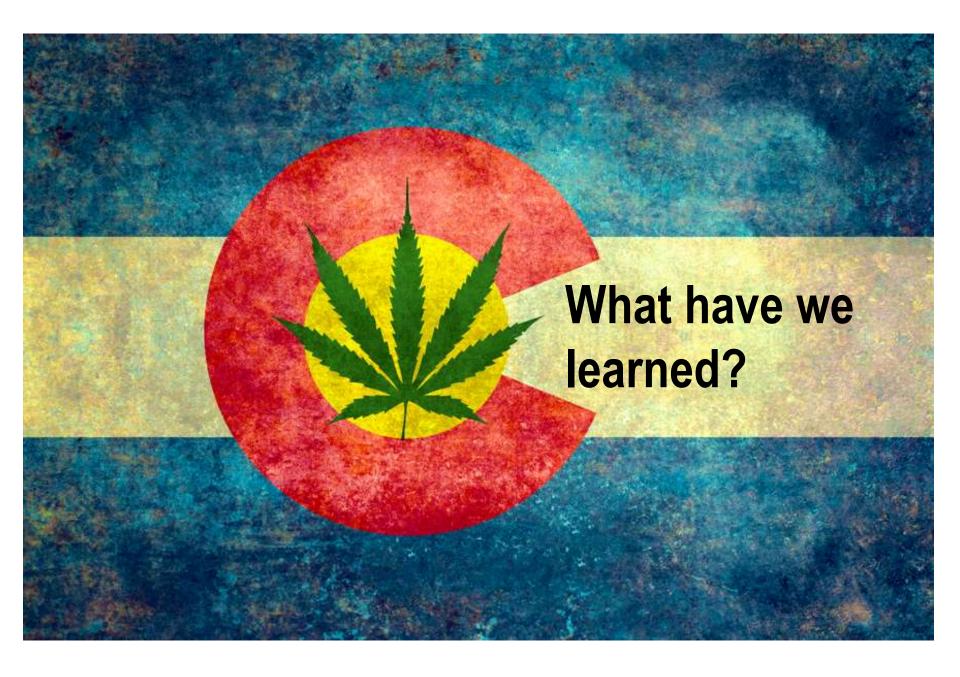


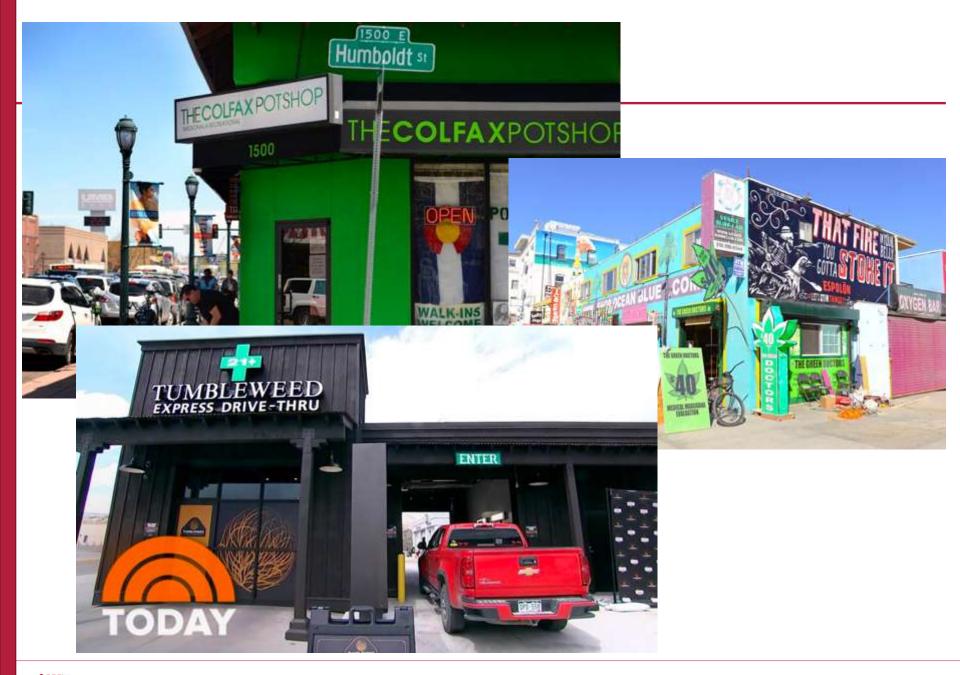
The top 10% of the population make up 75% of the alcohol industry's U.S. sales





© Same for Marijuana in Colorado





70% of marijuana dispensaries in Colorado recommended THC products to pregnant women.

 Medical dispensaries were more likely to recommend marijuana products than retail dispensaries: 83% and 60% respectively

 Marijuana's effects on developing babies could include low birth weight, and other developmental problems – including fatal anencephaly



Journal of Pediatrics (2018)

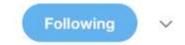
- THC remains in breastmilk up to 6 days after use of marijuana.
- AAP released statement on 8/30/18 advising pregnant and breastfeeding mothers to avoid the drug completely.



2019 Colorado Health Department Report

- 400% increase in marijuana poisonings of children 0-9 years of age
- 23,009 homes with children <u>are not storing marijuana</u> <u>products safely.</u>
- 32,800 homes where children 1-14 years of age <u>are</u> <u>exposed to second-hand marijuana smoke.</u>





Leaving the @CO_Symphony Gala at The Fillmore, I'm accosted on the sidewalk by a remarkably high woman. Lady nearby turns and says "And that's The Most Colorado

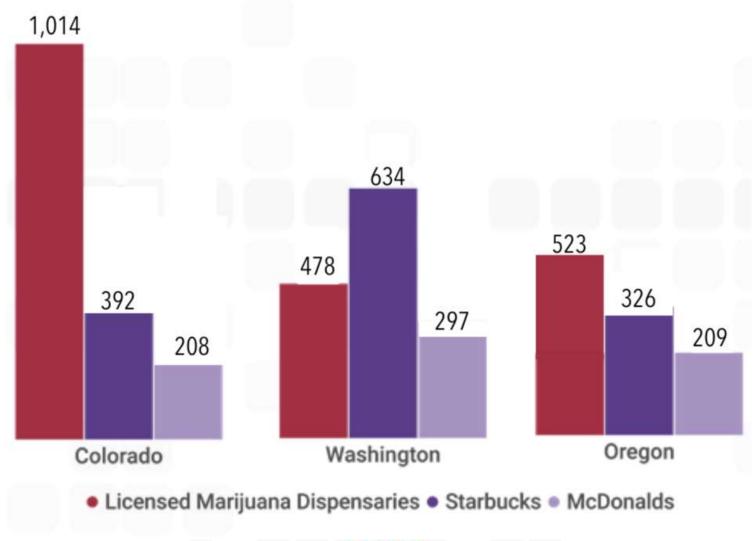
Thing You've Seen Today!" Just bought some Girl Scout cookies outside a pot shop. You got to love America. #girlscoutcookies

#9News

10:15 PM - 28 Apr 2018







2017

SOURCE: Colorado Department of Revenue; Starbucks Coffee Company, Corporate Office Headquarters; McDonalds Corporation, Corporate Office

Results of Legalization

Commercialization

- CO now #1 first-time youth use rate in the country
- Rampant advertising/commercialization
- A thriving underground market white, grey, and black.

Promotion of Special Interests

- THC caps have failed (State of CO)
- Limit on # and location of stores have failed (Denver)
- Money diverted to general fund (eg WA)

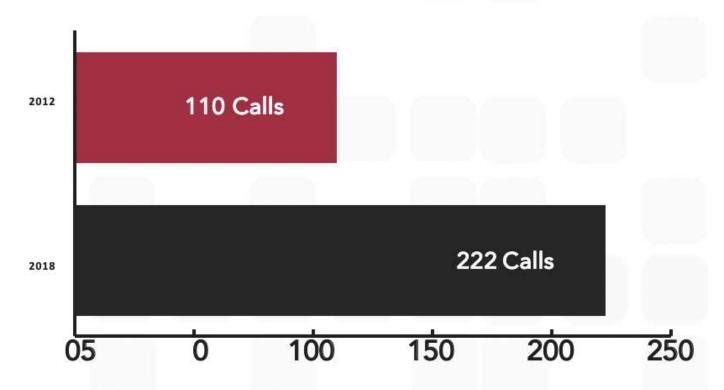


Monitoring the Future Data (2018)



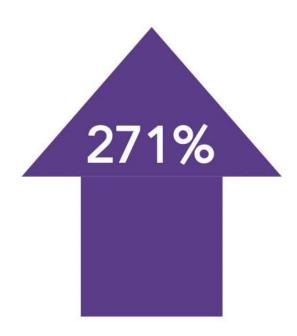
One in four 12th graders would try marijuana, or increase their use of the drug *if marijuana were legalized*.

MARIJUANA EXPOSURE CALLS TO COLORADO POISON CONTROL CENTERS



Since legalization, total marijuana exposure calls to Colorado poison control centers have more than doubled (110 calls in 2012 to 222 calls in 2018). The largest increase is among children 0-8 years old that suffered unintentional exposure to marijuana (Colorado Department of Pulic Health and Environment, 2019).

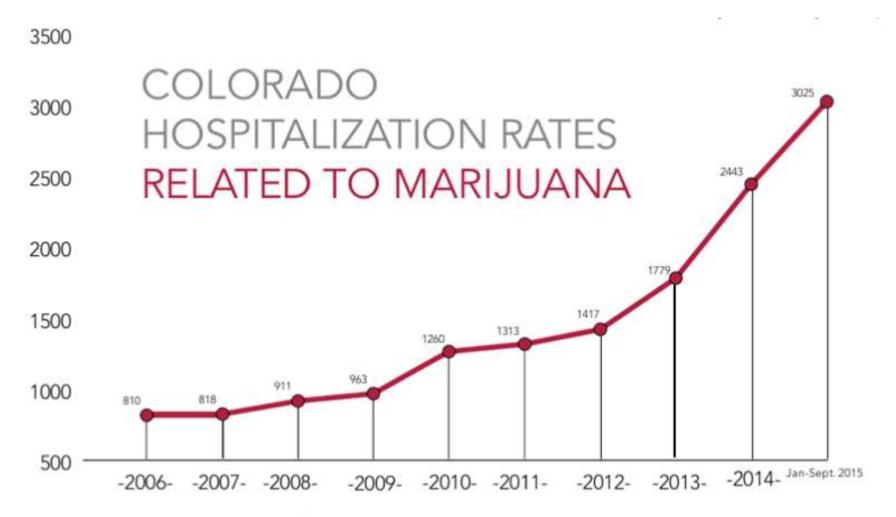




Marijuana-related cases for children under 5 year old reported to the Oregon Poison Center rose by 271% between 2014 and 2017 (Oregon Poison Center, 2018).



Washington State has seen a 70% increase in marijuana-related calls to the Washington poison center between the three years before and after legalization (Washington State Office of Financial Management, 2017).

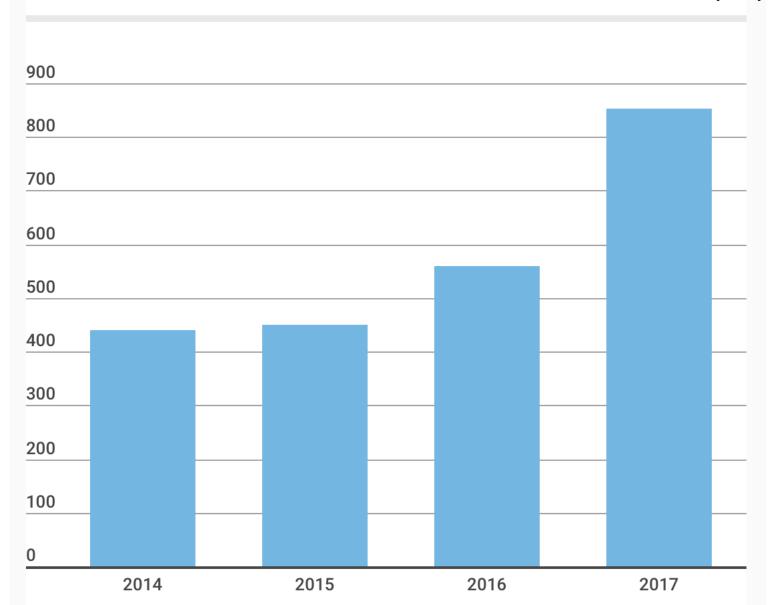


Source: Colorado Department of Public Health and Environment, Monitoring Health Concerns Related to Marijuana in Colorado: 2016

Marijuana-Impaired Driving Fatalities are Skyrocketing

- Colorado: 151% Increase since legalization
- Washington State: More than doubled since legalization
- Oregon: 50% of all drivers assessed tested positive for marijuana-impairment after legalization

Marijuana-only DUI arrests in Washoe County (NV)





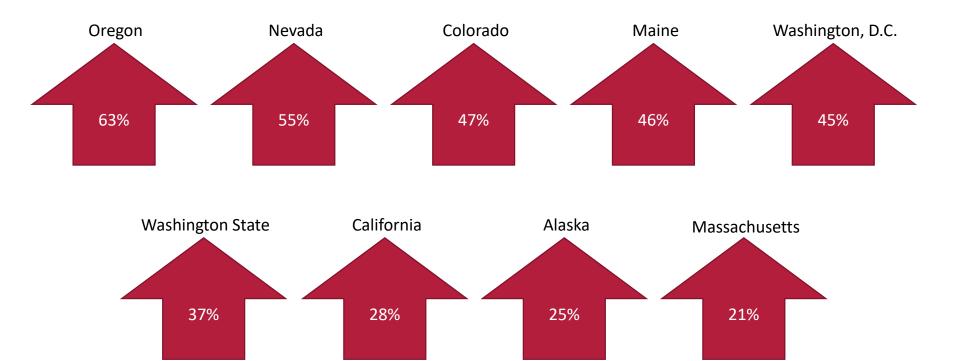
Washington Traffic Safety Study (2018)

- Marijuana-impaired driving fatalities have more than doubled
- One in five drivers are under the influence of marijuana.
 That is up from one in ten prior to legalization.
- 64.2% of respondents who reported using marijuana and driving stated that they didn't think that it impaired their ability to drive at all.
- Drivers who admit to driving within three hours of using marijuana are also more likely to drink and drive, not wear a seat belt, and binge drink

Workplace & Economy



Workplace Positivity Since Legalization





In the general workforce, marijuana positivity increased

4% from last year while it increased nearly
8% in the safety-sensitive workforce.

Increases in positivity rates for marijuana in the general U.S. workforce were most striking in states that have enacted recreational use statues since 2016. Those states include: Nevada (43%), Massachusetts (14%) and California (11%). These three states also saw significant increases in marijuana positivity in federally-mandated, safety-sensitive workers: Nevada (39%), California (20%), and Massachusetts (11%). Federally-mandated, safety-sensitive workers include pilots, rail, bus and truck drivers, and workers in nuclear power plants, for whom routine drug testing is required by the DOT.



NEWS ~

SHOWS V





##

Q

Nevada bans rejecting job applicants over marijuana use

BY IRINA IVANOVA

JUNE 13, 2019 / 12:03 PM / MONEYWATCH

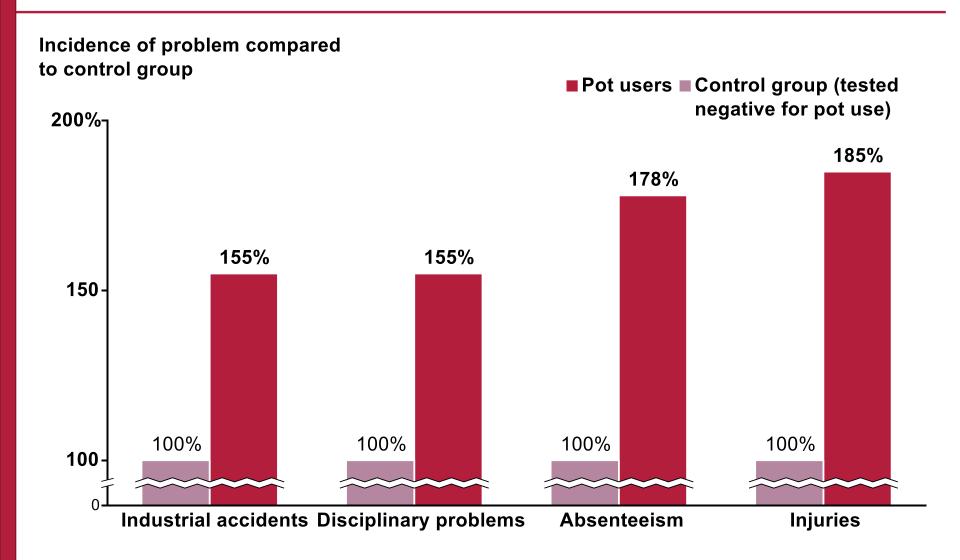








Accidents, injuries, absenteeism, and disciplinary problems among pot users all increase costs





Source: Zwerling et al (1990) 69

Drug use is forcing CO employers to hire out-of-state employees



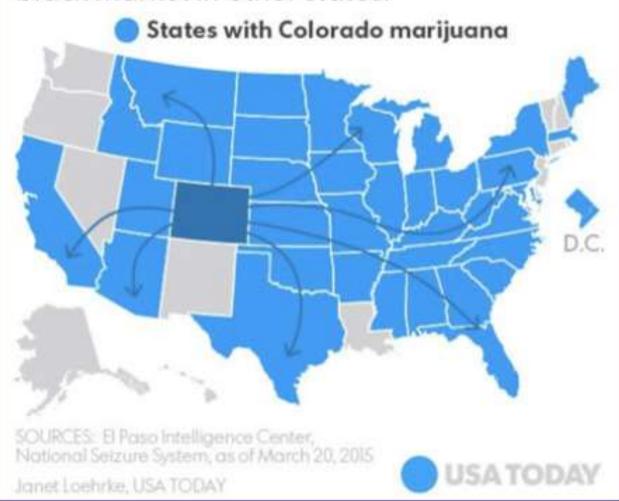
"Jim Johnson [construction company GE Johnson's CEO]...said his company has encountered so many job candidates who have failed pre-employment drug tests because of their THC use that it is actively recruiting construction workers from other states."

A State's Rights Issue?



COLORADO MARIJUANA SMUGGLING

Authorities say they've intercepted thousands of shipments of marijuana leaving Colorado, destined for sale on the black market in other states.







GLOBAL POWER

POLITICS U.S. NEWS BUSINESS WORLD TECH & MEDIA THINK SPORTS

Foreign cartels embrace home-grown marijuana in pot-legal states

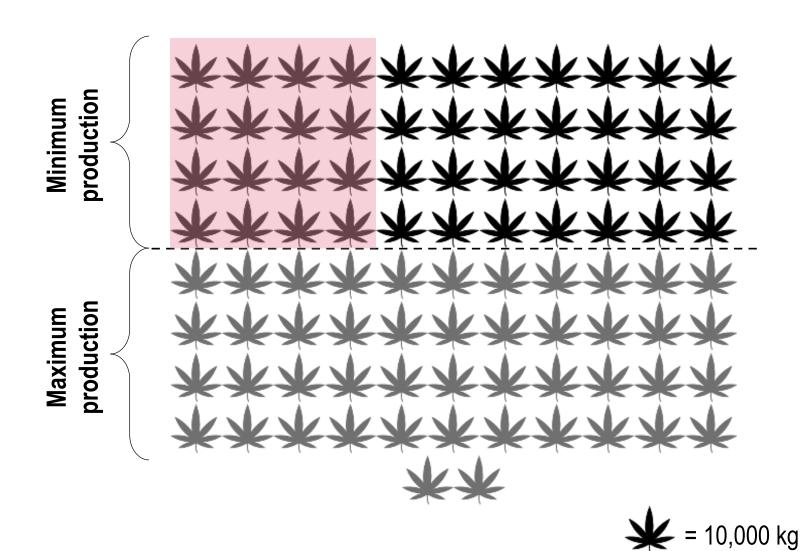
Foreign gangs are finding that black-market marijuana is profitable even in states that have legalized cannabis.



Crime & Justice



Just 18 to 30 percent of Oregon's marijuana is sold legally





Oregon Secretary of State Issues Scathing Audit of Marijuana Regulations

30/0

of pot shops have been inspected.

"Oregon's marijuana testing program cannot ensure that test results are reliable and products are safe."



2019 OR Secretary of State 76

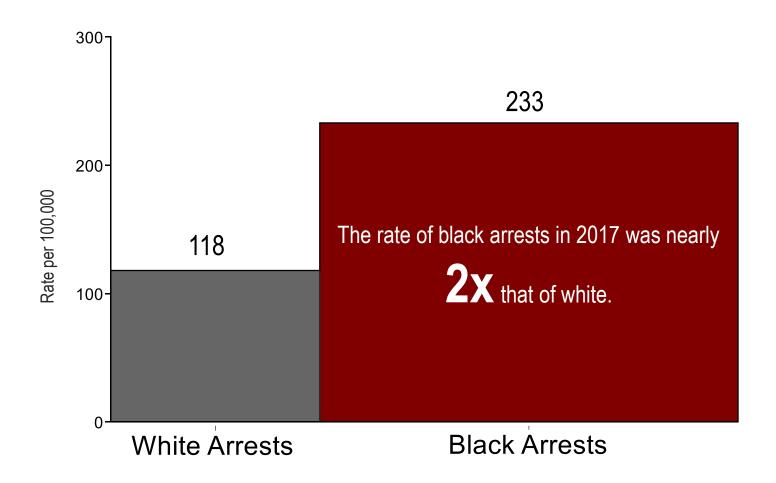
MARIJUANA RELATED CRIME AND **OFFENSES** SINCE LEGALIZATION

One hundred three (103) law enforcement agencies reported 6727 qualifying incidents in 554 public schools during the 2015-16 academic year, from August 1, 2015 through July 31, 2016.

CRIMES AND OFFENSES IN PUBLIC SCHOOLS, 2015-2016

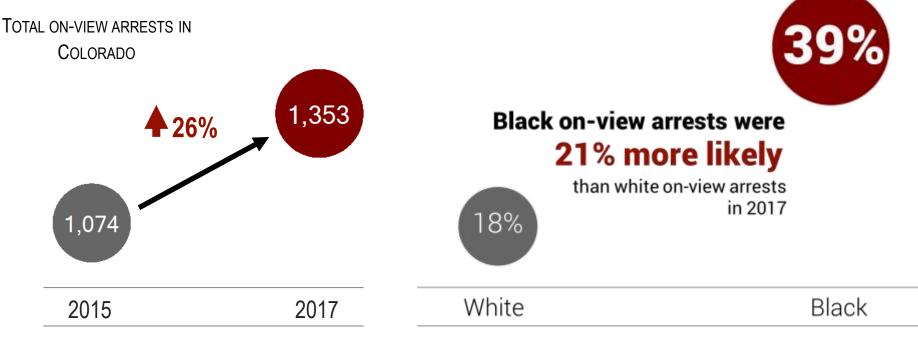
OFFENSE	N	%	CUMULATIVE %
Marijuana (#1)	1561	23%	23%
Assault	834	12%	36%
Disorderly Conduct/ Fighting	814	12%	48%
Public Peace	666	10%	58%
Dangerous Drugs	420	6%	64%
Larceny/Theft	341	5%	69%
Liquor/Alcohol	297	4%	73%
Tresspass	260	4%	77%
Obstruct	206	3%	80%
Harassing Communication	203	3%	83%
Other/Unclear	194	3%	86%
Weapon Offense	141	2%	88%
Tobacco	127	2%	90%
Damage Property	120	2%	92%
Traff 画像Offense	91	1%	93%
Sexual Assault/Offense	76	1%	94%
Warrant	57	1%	95%
Criminal Mischief	47	1%	96%
Runaway/ Missing Person	41	1%	97%
Interference with Educ Inst	39	<1%	97%
Truancy	36	<1%	98%
Burgary	33	<1%	98%
Menacing	26	<1%	99%
Arson	25	<1%	99%
Robbery	20	<1%	99%
Curfew	16	<1%	100%
Family/Child Offense	12	<1%	100%
Vehicle Theft	8	<1%	100%
Fraud/Forgery	5	<1%	100%
Kidnapping	5	<1%	100%
Invasion of Privacy	2	<1%	100%
Total	6727	100%	100%

Source: Colorado Department of Public Safety, 2017



Colorado Dept. Public Safety, 2018

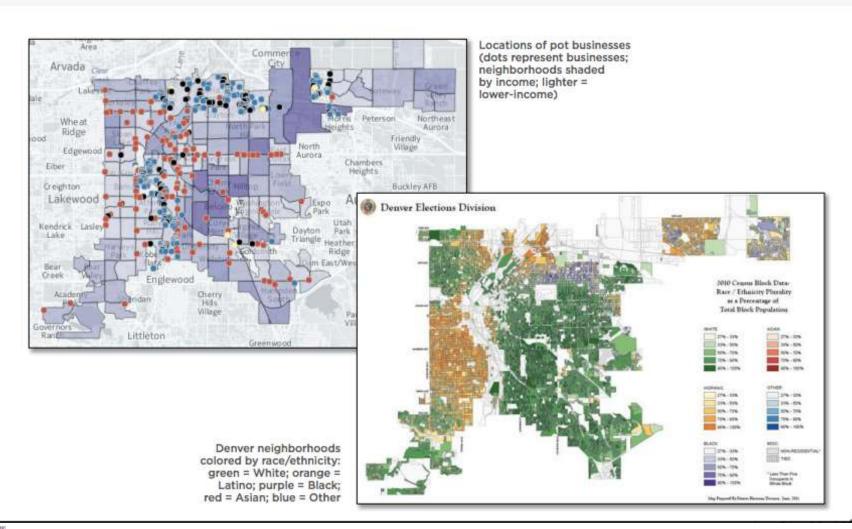
In Colorado, African-Americans were disproportionately arrested without a warrant or previous incident report in 2017.



Colorado Dept. Public Safety, 2018



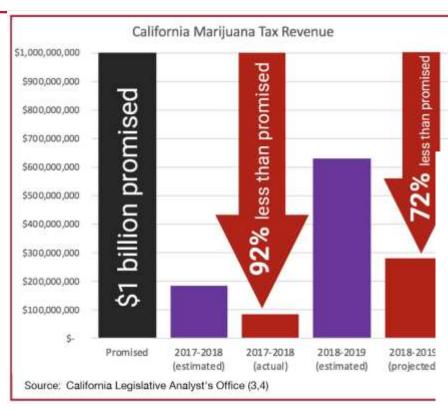
MARIJUANA BUSINESSES IN DENVER ARE CONCENTRATED IN NEIGHBORHOODS OF COLOR



Tax Revenue?



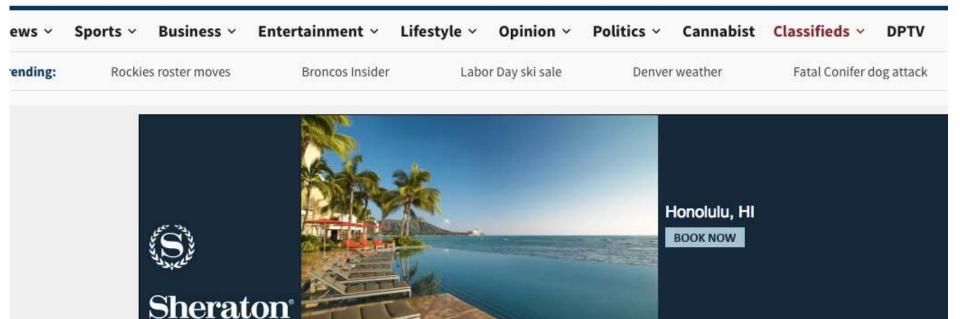
Revenues V Reality



Marijuana Taxes as a Percent of State Budgets

State	Percent of
State	Budget
Colorado	0.78%
Washington	0.30%
Oregon	0.24%
Alaska	0.12%
California	0.20%

THE DENVER POST



OPINION > OPINION COLUMNISTS

Why pot taxes can't solve Colorado's budget problems



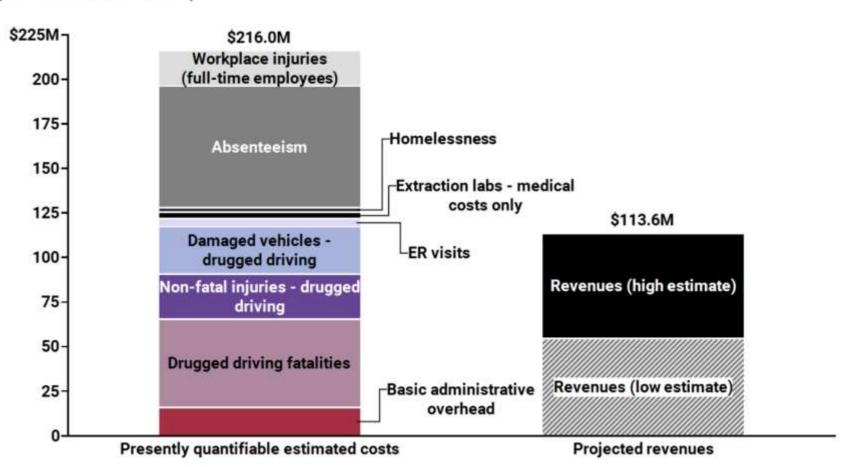
By CHRIS STIFFLER





In CT, estimates of just a few costs outweigh projected revenues by over 90%

Estimated value for 2020 (in millions of 2016 dollars)





Source: SAM study

How did marijuana fare in the 2018 elections?



North Dakota

ND group forms to point out negative health effects of recreational marijuana

HEALTHY & PRODUCTIVE

By Barry Amundson on Oct 9, 2016 at 5:42 p.m.



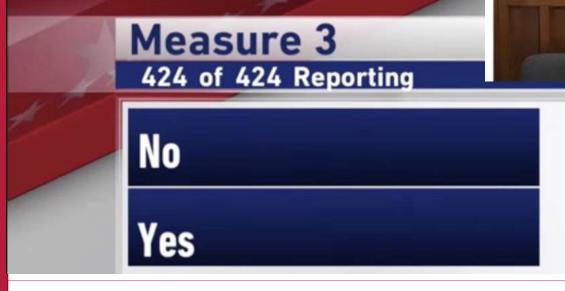








Measure 3 goes up in smoke



59% 192,965 131,585

AGAINST MEASURE 3



Michigan

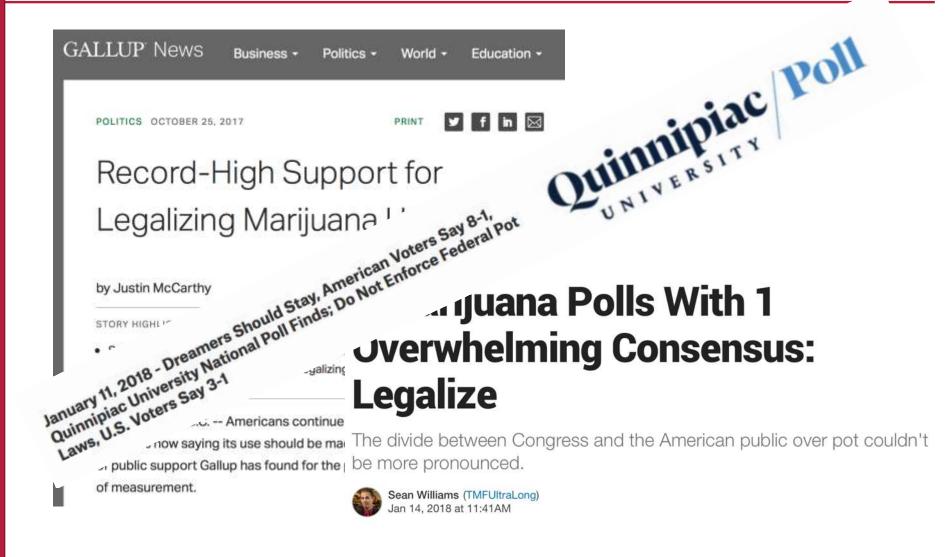
Michigan Proposal 1				
Result	Votes	Percentage		
✓ Yes	2,346,713	55.90%		
No	1,851,679	44.10%		



The Jury is Still Out...



Does the Public Support Marijuana Legalization?





How You Ask the Question Is Key

- Most polls pose a binary question: legalization or criminalization
- The public equates decriminalization and legalization
- But there is a significant difference

Example: Support for Legalization Drops 20 Points

NY state poll, 600 voted in 2016 election, Emerson College (Nov 30-Dec 2, 2017)

Question: Do you think the use of marijuana should be made legal for adults aged 21 and older?

Yes: 60% No: 29% Unsure: 11%

Question: Knowing that personal marijuana possession is already decriminalized and medicalized in New York, which one of the following marijuana policies do you prefer?

Keep current policy: 26%

Keep medical, repeal decriminalization: 22%

Legalize marijuana: 40%

Repeal both, make marijuana completely illegal: 11%



2019 National Emerson Poll:

68% of Americans want options other than legalization



Policy Solutions



In States That Have Legalized:

- Edibles and high THC concentrates should be outlawed or severely restricted
- The Marijuana Industry should not serve on rule-making bodies to determine regulations.
- Pot advertising and promotions should be prohibited.
- A science-based public awareness campaign should be implemented across multiple media.
- Drugged driving prevention should be a priority, with tough laws imposed on those who drive stoned.

In States That Have Not Legalized:

- Remove criminal penalties and arrest records for personal possession of pot.
- Pot use should be discouraged, and people caught repeatedly with marijuana should be directed to early interventions and/or treatment.
- A science-based public awareness campaign should be implemented across multiple media.
- **Drugged driving prevention should be a priority,** with tough laws imposed on those who drive stoned.

OVERALL OBJECTIVES

An alternative policy to drug legalization that:

- 1 Minimizes drug use, especially problematic use
- Resolves underlying substance abuse problems driving criminal behavior (beyond simple possession and use)
- 3 Reduces recidivism
- 4 Saves societal resources



My Reason for Being Here



LESSONS LEARNED FROM STATE MARIJUANA LEGALIZATION

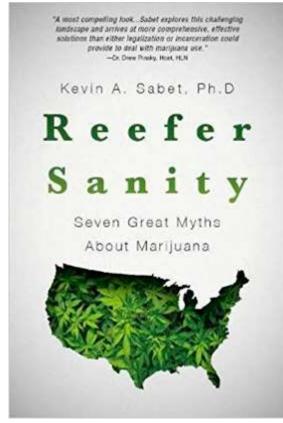
MAY 2019

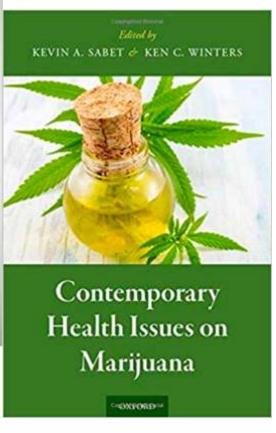


Reviewed by researchers from: University of Colorado at Deriver Harvard Medical School Boston Children's Hospital University of Connecticut Yale University University of Kansas and more

SAM Smart
Approaches to
Marijuana
preventing another big tobacco

Resources





Drugabuse.gov LearnaboutSAM.org MarijuanaReport.org



Contact us www.learnaboutsam.org luke@learnaboutsam.org